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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|------------------------------|------------------------|
| 10/672,577 | 09/26/2003 | Walter E. Donovan | NVDA P000848 | 8641 |
| 26291 7590 07/16/2007 PATTERSON & SHERIDAN L.L.P. 595 SHREWSBURY AVE, STE 100 FIRST FLOOR SHREWSBURY, NJ 07702 | | | EXAMINER AZARIAN, SEYED H | |
| | | | ART UNIT 2624 | PAPER NUMBER |
| | | | MAIL DATE 07/16/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/672,577 | | DONOVAN ET AL. | |
| | Examiner | | Art Unit | |
| | Seyed Azarian | | 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

RESPONSE TO AMENDMENT

1. Applicants' amendment filed, 5/2/2007, see page 5 through page 6, with respect to the rejection of claims 1-20 have been fully considered and but they are not persuasive.

2. Contrary to the applicant's assertion, page 6, line 11, as he pointed out that Kilgariff reference does not teach or suggest, "biased ratio" recited in the independent claim 1, is used to modify the "anisotropic ratio" to determine the number of texture samples within "**single mipmap**" to use for filtering". And the same argument for independent claims 10 and 16 reflect limitations similar to those of claim 1.

A): The applicant is respectfully reminded that the features upon which applicant relies (determining the texture samples using a "**single mipmap**"), are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

B): In response to applicant's argument, Examiner indicates that Kilgariff clearly discloses limitations in claim 1, which states applying a bias to the ratio values to determining a number of texture samples (Fig. 31, 33 and 34, column 4, lines 7-14 parameter (bias) used in the calculation Anisotropic area in texture space, also column 13, lines 13-26, generating pixel area in texel space and determining anisotropic slope and anisotropic ratio. Also, column 29, line 65 through column 30, line 14, refers to anisotropic filtering and bias ratio. Finally, Column 31, lines 45-50, FIG. 33 is a graphical representation of sampling 3300 and neighborhoods 3302 with

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respect to anisotropic ratios. As shown, when the anisotropic ratio is at 1.0, a simple 2.times.2 neighborhood 3304 is walked. One sample is taken, with the AniScale (bias) factor set to 1.0).

C): Although "mipmap is not stated in the claim, Examiner indicates, that "mipmap" is a computer graphic technique providing several texture maps for various levels intended to increase speed and reduce artifacts, which Kilgariff clearly discloses (column 21, lines 2-10, the anisotropic ratio is clamped to a user-definable value to limit the number of steps the kernel walker makes to perform proper filtering to determine a number of texture samples, which is shown in the Table, column 22-26, which clearly shows the input calculations of a ratio value, applying a bias to the ratio value, determining the number of samples. Lastly, (column 44, lines 28-48, anisotropic filtering is done on one mipmap, then on the other. Resulting in pixels iterating for twice the time, scale factors are set so that the total of all contributions sum to one).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-20 rejected under 35 U.S.C. 102(e) as being anticipated by Kilgariff et al (U.S. patent 6,850,243).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

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102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Kilgariff discloses a method of computing a biased ratio value for anisotropic texture map filtering, comprising (see Fig. 31, 33 and 34, column 4, lines 7-14 parameter (bias) used in the calculation Anisotropic area in texture space);

receiving a ratio value for a texture map (column 13, lines 20-39, anisotropic slope and anisotropic ratio);

applying a bias to the ratio value to produce the biased ratio value, and determining a number of texture samples to filter based on the biased ratio value (column 13, lines 13-26, the unit additionally generates scale S and T addresses per the calculated LOD and programmed LOD bias, also neighborhoods are generated for multiple clocks to perform trilinear, anisotropic and percentage passed filtering).

Regarding claim 2, Kilgariff discloses the method of claim 1, wherein the applying comprises scaling the ratio value by the bias summed with one to produce the biased ratio value (column 17, table 4, number texture in linear order).

Regarding claim 3, Kilgariff discloses the method of claim 2, wherein the applying further comprises clamping the biased ratio value to a number less than or equal to one (column 29, line 66 through column 30, line 14, refer to biased ratio).

Regarding claim 4, Kilgariff discloses the method of claim 2, wherein the bias is programmed (column 2, lines 55-64, computer program product are provided (fetched from memory)).

Regarding claim 5, Kilgariff discloses the method of claim 2, wherein the bias is determined by a software driver (Fig. 201, column 8, lines 65-66, refer to software).

Regarding claim 6, Kilgariff discloses the method of claim 2, wherein the bias ranges from 0 to 15/16 (column 50, lines 52-58).

Regarding claim 7, Kilgariff discloses the method of claim 1, further comprising determining the bias based on a performance mode selected by a user (Fig. 1, column 9, lines 50-59, user interface).

Regarding claim 8, Kilgariff discloses the method of claim 1, further comprising performing trilinear filtering when the biased ratio value is greater than or equal to one (column 30, lines 10-13, trilinear filtering).

Regarding claim 9, Kilgariff discloses the method of claim 1, further comprising performing anisotropic filtering when the biased ratio value is less than one (column 30, 2-7, the scale factors equals one).

Regarding claim 11, Kilgariff discloses the method of claim 10, wherein the bias corresponds to a texture identifier (see claim 1, also column 2, lines 43-54, and column 4, lines 7-14 parameter (bias) used in the calculation Anisotropic area in texture space).

Regarding claim 12, Kilgariff discloses the method of claim 10, wherein the bias is programmed (column 2, lines 55-64, computer program product are provided (fetched from memory)).

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Regarding claim 14, Kilgariff discloses the method of claim 10, further comprising clamping the biased ratio value to one when the biased ratio value is greater than one (column 30, lines 10-13, trilinear filtering).

Regarding claim 16, Kilgariff discloses a programmable graphics processor for generating images using anisotropically filtered texture samples, comprising: a texture unit configured to receive texture parameters and compute a filtered texture sample, the texture unit including an anisotropic optimization unit configured to compute a biased ratio value indicating a number of texture samples to anisotropically filter (see claim 1, also column 11, lines 9-25, texture sampling computer program product for use in a graphics).

Regarding claim 17, Kilgariff discloses the programmable graphics processor of claim 16, further comprising an address computation unit configured to determine one or more read addresses using at least a portion of the texture parameters and the biased ratio value (column 2, lines 55-64, computer program product are provided for calculating a pixel color based on texture address mapping, texels are fetched from memory).

Regarding claim 19, Kilgariff discloses the programmable graphics processor of claim 16, wherein the anisotropic optimization unit includes a storage element configured to store one or more biases (see claim 17, also column 29, lines 65 through column 30, line 14, refer to biased ratio).

Regarding claim 20, Kilgariff discloses the programmable graphics processor of claim 16, wherein the anisotropic optimization unit includes a storage element configured as a lookup table (column 29, lines 65-68, the Anisotropic lookup table).

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With regard to claims 10, 13, 15 and 18, the arguments analogous to those presented above for claims 1, 2, 3 and 17 are respectively applicable to claims 10, 13, 15 and 18.

Conclusion

5. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.

Status information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seyed Azarian
Patent Examiner
Group Art Unit 2624
July 14, 2007

Seyed azarian